

Water Resources Department

725 Summer St NE, Suite A Salem, OR 97301 (503) 986-0900 Fax (503) 986-0904

January 5, 2016

Greg Oberndorf 26496 Deb Lane Parma, ID 83660

Re: Lonesome Lake Dam (L-15) – Inspection Summary

I inspected Lonesome Lake Dam on August 25, 2015, with Keith Mills, the State Engineer. The Water Resources Department conducts routine inspections of the dam's exterior surfaces to identify conditions that might affect the safety of the dam. Dams are assigned a hazard rating based on downstream hazard to people and property, not on the condition of the dam. Lonesome Lake Dam has a high hazard classification. High hazard dams are inspected annually.

Summary: The dam is fair condition. Due to excessive vegetative growth and accumulated debris restricting flow at the pipe inlet, the spillway continues to be the main concern at the dam. To prevent overtopping, which could lead to dam failure, the spillway must be maintained to flow at full capacity. We have observed no evidence of valve operation over about the last five years. Additionally, the valve outlet still appears to be completely covered with soil and debris. The low level conduit must be functional to lower the reservoir, as needed, for maintenance or an emergency.

Results of Inspection:



Dam upstream side, from right abutment. Note vegetation.

During the inspection, the reservoir was about 2 feet below the dam crest. Excessive vegetation along the shoreline hindered inspection of the dam's upstream side. Since the previous inspection, a screen was placed at the inlet to the spillway pipe, located on the upstream side of the dam near the right abutment. However, excessive vegetation and an accumulation of floating vegetation were observed on the screen. These conditions significantly restrict inflow to the spillway pipe. The spillway approach channel and inlet screen must be kept free of vegetative growth and debris.



Spillway pipe inlet. Note screen, vegetation, and debris.

The top end of the operator stem for the low level outlet conduit is located on the upstream side of the dam. We could not inspect the low level conduit outlet, because it is buried under loose fill under dense vegetation. Based on the condition of operator stem and soil and rock covering the outlet, it appeared that the low level outlet valve had not been operated recently. The low level conduit and valve must be maintained so it is able to lower the reservoir, as needed, for maintenance or an emergency.



Operator stem for low level outlet valve.



Dam crest viewed from left abutment.

No sign of settlement or cracking was observed on the dam crest. The dam crest is wide and clear of trees and brush to the shoulders. Past inspection reports state that vegetation was removed from the crest a few years ago. A few trees remain on the upstream shoulder. Excessive trees and brush were observed along the downstream toe.



Dam downstream slope and toe, crest in foreground.

In addition to hindering inspection and access, trees and woody vegetation can have roots that penetrate deep into the dam. When the vegetation dies, roots decay and leave seepage paths in the dam, especially if there are burrowing animals. Also, taller trees are prone to blowing over, which can also compromise the dam integrity.

Drawings for Water Rights

In addition to this routine inspection, we also received information for completion of the water rights process, including one drawing from Dave Shaw of ERO Resources, a consultant working for you. We will need the as-builts to include the actual dimensions of the dam itself, including crest width, slope steepness, and conduit and spillway dimensions, as described in Oregon Administrative Rule 690-020-0080(5). The engineer is not required to certify the parts of the dam that are unseen, but will need to observe that the conduit can be operated properly, and document this in the final letter along with asbuilt drawings. These must have the stamp of a Professional Engineer registered in Oregon.

Recommendations:

- 1. Clear vegetation and debris from the spillway approach channel and pipe inlet screen, as needed to maintain full flow capacity. If this action is not sufficient to maintain full flow capacity, it may be necessary to construct an intake structure with a trash rack.
- 2. Clear soil and debris from the low level conduit outlet. It may be possible to do this by opening the valve. If the valve has not been operated recently, we recommend that you open it in the fall, when your need for water is lower, in case it requires repairs.
- 3. Remove vegetation from the dam upstream side and downstream toe.
- 4. Have an engineer submit final documentation so the water right process can move forward.

We use a standard inspection form, and a copy of the field inspection sheet for this dam is attached. Another routine inspection is planned for next year. Please let me know if you have any questions about this inspection.

Sincerely,

Gerald Pierce, P.E.

Civil Engineer

(503) 986-0839

C: Ron Jacobs, Watermaster District 9

Dam Safety File L-15

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Dam Safety Inspection Form

State of Oregon Water Resources Department 725 Summer Street NE, Suite A Salem, Oregon 97301-1271 (503) 986-0900

oneso	me File	#: L-15					
orage:	186ac. ft	. Permit:R-	12601 NID #: O	R- 03792			
/ 🗆 S	Significar	nt MHigh	Request	Inundation A	Analysis for ch	iange	
th Mi	lls and Ge	erald Pierce	Watermaster Di	strict: 9			
5 W6	eather: ho	t and sunny					
Date:	:7-1-2014	Issues fro	m prior inspectio	n: brush and	trees, soil and	debris in conduit	
specti	ion Neede	ed: Nex	at Inspection Date	: 2016			
						ner and dam safety	
⊠ E	Earth	Rock	□ Concrete	Other			Rating
bush	and a few	trees					3
very	wide, brus	sh on shoulde	EES				4
brusl	i and trees				e, Depression, S	lide	3
Vege	tation, An	imals, Erosic	on, Seepage, Leak (muddy)			3
							3
_			ge, Leak (muddy), l	Boil			3-
ow	Right	gpm Cen	ter gpm L	eft gpm	Other?gpm(use comment)	
(s)	□ No [] Yes [1 2 3	□ 4 □ 5	over 5		
	Observat	tion of dowr	istream slope and	l toe hindered	by excessive	vegetation	
	Pool e	elevation: -2	2.0	Point of Re	ference: crest	1	Rating
oard	Vertica	al distance de	bris from debris lir	ne to crest 1.5 f	ì.		3
/Trash	ı 🗵 Cle	ean 🔲 A	Around reservoir	☐ Near sp	illway		4
	⊠ No	needed [Present Ne	eded De	terioration 🔲	Ineffective	
ions	⊠ Ne	one 🗌 Acti	ve Landslide	Wildfire in W	atershed 🔲 (Other (comments)	
	Excess	ive vegetatio	n along shoreline.				
							T
# No	ne						
							+
				•			-
	th Miles The Second of the Miles The Second	orage: 186ac. ft Significant Significan	Significant High th Mills and Gerald Pierce Weather: hot and sunny Date:7-1-2014 Issues fro spection Needed: Nex S-Very good; 4-Adequate r needed; 1- Urgent dam s Earth Rock Vegetation, Animals, Erosion bush and a few trees Width, Surfacing, Vegetation very wide, brush on shoulde Vegetation, Animals, Erosion brush and trees Vegetation, Animals, Erosion Vegetation, Erosion, Seepag brush and trees Wegetation, Erosion, Seepag brush and trees Wegetation Gerosion, Seepag brush and trees Ow Right gpm Cen S) No Yes Observation of down Pool elevation: -2 oard Vertical distance de Trash Clean Active Excessive vegetation Excessive vegetation	orage: 186ac. ft. Permit:R-12601 NID #: Orage: 186ac. ft. Permit:R-12601 NID #: Orage: Significant High Request the Mills and Gerald Pierce Watermaster Discontinuous Poate: Request Significant Next Inspection Poate: Solvery good; 4-Adequate 3-Maintenance or reeded; 1- Urgent dam safety issue — activate Solvery good; 4-Adequate 3-Maintenance or reeded; 1- Urgent dam safety issue — activate Vegetation, Animals, Erosion, Wave Action, Double and a few trees Width, Surfacing, Vegetation, Trampling, Depvery wide, brush on shoulders Vegetation, Animals, Erosion, Seepage, Leak (brush and trees Vegetation, Animals, Erosion, Seepage, Leak (Vegetation, Animals, Erosion, Seepage, Leak (Vegetation, Erosion, Seepage, Leak (muddy), brush and trees Wight Solvers Solver	prage: 186ac. ft. Permit:R-12601 NID #: OR- 03792 Significant	orage: 186ac. ft. Permit:R-12601 NID #: OR- 03792 Significant	prage: 186ac. ft. Permit:R-12601 NID #: OR-03792 Significant

IV. Conduit Con	trol:	☐ Manual ☐ Power ☐ Other ☐ Conduit Control missing	Rating			
Inlet	⊠ Sub	merged Debris on Trash Rack Deterioration				
Trickle tube	☐ Non	e Screened Blockage Deterioration				
Control/Stem	□ Оре	☐ Operable ☐ Damaged ☐ Missing no wheel				
Valve(s) cycling	☐ Froz	Frozen 🛮 unknown 🗀 past year 🔝 frequent				
Size: buried	Material	Material Condition				
Outlet Structure	○ Ove	☑ Overgrown ☐ Clean ☐ Pressurized ☐ Leaking gpm				
Secondary outlet	☐ Yes	☐ Yes ☐ No Type Diameter in.				
Comments:	valve ste	em did not appear to have been operated recently				
V. Spillway		Earth Rock Concrete Other	Rating			
Modifications		one Reduction in capacity Feature not on design				
Approach Channel	CI	☐ Clear ☐ Trees/brush ☐ debris ☐ erosion				
Control Section	Width	Width Depth Concrete Rock Soil Culvert Unstable				
Flashboards/Gate	□ No	one				
Discharge Channel		☐ Clear ☐ Trees/brush ☐ leakage ☐ headcutting (feet approaching control section, depth feet.)				
Stilling basin	⊠ N/					
Aux. Spillway	☐ Ye	☐ Yes ☑ No (use comments below)				
Comments:						
			D.			
VI. Access and Secu	irity		Rating			
Vehicle access		Public road all weather road dirt road cross country	3			
Fencing, signage		Remote Gate Secure Fence Camera Uncontrolled	3			
New Structure below dam		Dwelling ft Paved public road ft Other sig building ft	-			
Emergency Action Plan		☐ Not required ☐ Completed at dam (dated) ☐ None				
Comments:						
Instrumentation data Other:	reviewe	ed: 🛛 N/A 🗌 Yes 🗌 No				

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